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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,953	12/08/2003	Koji Kitani	03560.003412.	9008
5514 7590 12/14/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER TALBOT, BRIAN K	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 12/14/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/728,953	<b>Applicant(s)</b> KITANI, KOJI	
	<b>Examiner</b> Brian K. Talbot	<b>Art Unit</b> 1792	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/17/07 has been entered.
2. The non-entered amendment filed 8/28/07 has been considered and entered per filing an RCE. Claims 1-5 remain in the application.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted state of the art (specification, [0002]-[0011]) in combination with Huggins (6,153,268) or JP 49-022119.

Applicant's admitted state of the art (specification, [0002]-[0011]) teaches forming a piezoelectric film by gas deposition techniques comprising ejecting ultra-fine particles having a perovskite structure on a substrate and polarizing the layer to form the piezoelectric film. The

electric field applied in the polarizing step has an intensity of from 1-5 kV/mm. The substrate can be metal or resin.

Applicant's admitted state of the art (specification, [0002]-[0011]) fails to teach applying the electric field to the ultra-fine particles while traveling toward the substrate as opposed to on the substrate.

Huggins (6,153,268) teaches a method of producing oriented piezoelectric films. This is done by bombarding a target comprising a piezoelectric material, dislodging the particles, ionizing the particles, and electrostatically attracting the dislodged particles to the substrate (abstract and Fig. 2). Huggins (6,153,268) teaches ionizing the particles by establishing an electric field within the chamber (22) with a coil (36) placed around the chamber (22) (col. 3, lines 20-50). Huggins (6,153,268) teaches dislodging ionized particles and ionizing them in a RF field and depositing on the substrate to form a highly oriented piezoelectric layer (col. 4, lines 6-19).

JP 49-022119 teaches piezoelectric thin films produced by spraying the piezoelectric particles and subjecting them to an electric field to control the polar axes for producing a piezoelectric film (abstract and Figs. 1-3).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Applicant's admitted state of the art (specification, [0002]-[0011]) by incorporating an electric field as evidenced by Huggins (6,153,268) or JP 49-022119 to produce the oriented piezoelectric films without the need for a subsequent polarizing step.

***Response to Amendment***

5. Applicant's arguments filed 8/28/07 have been fully considered but they are not persuasive.

Applicant argued that Applicant's admitted state of the art (specification, [0002]-[0011]) fails to teach applying a potential difference between and ejecting device and the substrate or between the vicinity of the ejecting device and the substrate to apply an electric field to the ultra-fine particle and that Huggins (6,153,268) or JP 49-022119 fail to teach an electric field between an ejecting device and a substrate.

The Examiner disagrees. Applicant is reminded that attacking individual references and pointing out the differences between the reference and each individual reference is not sufficient to overcome a rejection based on a combination of the references. One cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. *In re Keller*, 208 USPQ 871 (CCPA 1981); *In re Merck & Co., Inc.*, 231 USPQ 375 (Fed. Cir. 1986). Furthermore, the references must be taken collectively as the test of obviousness is not express suggestion of the claimed invention in any or all references but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them. *In re Rosselet*, 347 F.2d 847, 146 USPQ 183 (CCPA 1965); *In re Hedges*, 783 F.2d 1038. In this case Huggins (6,153,268) clearly teaches applying an electric field between the substrate and the "source of piezoelectric materials", i.e. target in which material is dislodged and deposited on the substrate. Hence, the combination would teach and ejecting device (Applicant's admitted state of the art (specification, [0002]-[0011])) having

an electric field applied between the ejecting device and the substrate. Regarding JP 49-022119, the claims also recite "between the vicinity" of the ejecting device and the combination rejection would meet the claimed limitation.

Applicant argued that the secondary references fail to teach orientating or polarizing the particles.

Arguments are not commensurate in scope with the claims. The claims do not require polarizing or orientating, but only require applying an electric field to the particles and applying them on the substrate.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:  
10/728,953  
Art Unit: 1792

Page 6

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Brian K Talbot  
Primary Examiner  
Art Unit 1762

BKT